

Serial No. 10/776,498
Amendment Dated June 14, 2007
Reply to Office Action of March 20, 2007

II. Amendments to the Specification:

Page 5, lines 25-30 through page 6, 1-¹⁰~~3~~, replace the paragraph with the following:

5-22-08
TM

In normal operation of the described robot, the servo motors 16, 18 and 20 drive the gear racks 26, 28 and 30 to thereby impart a swinging motion, translating ~~to~~ the base plate 62 while still maintaining it in a horizontal disposition throughout its range of motion. However, should one or more of the detachable ball joints coupling the base member to the forearms become disengaged, the base plate 62 will either tilt away from the horizontal or begin to rotate. The sensor 76 detects the tilting or rotational movement of the base plate and develops a signal that is sent to an emergency stop (power interrupt) circuit that shuts off power to the servo drives to thereby prevent damage to the robot assembly itself or to products being handled.

Without limitation, the sensor 76 may comprise a solid-state angular rate sensor or gyroscope, such as an ADXRS 150 angular rate sensor available from Analog Devices Corporation. It is commercially-available surface-micromachined angular rate sensor incorporating integrated electronics. Depending on how the device is mounted, its primary axis of sensitivity can be any one of the three axes of motion: yaw, pitch or roll. The device outputs a voltage proportional to the angular rate, as determined by its sensitivity, measured in millivolts per degree per second.